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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/776,680

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Yun-hyeok Im

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20575

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04/30/2008

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EXAMINER

CIRIC, LJILJANA V

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

04/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/776,680	Applicant(s) IM ET AL.	
	Examiner Ljiljana (Lil) V. Ciric	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-14 and 16-32 is/are pending in the application.
4a) Of the above claim(s) 13, 31 and 32 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-21 is/are allowed.
- 6) ☒ Claim(s) 1-9, 12, 14, 16, 17 and 22-30 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the reply filed on January 31, 2008.
2. Claims 1 through 10, 12 through 14, and 16 through 32 remain in the application.

Response to Arguments

3. Applicant's arguments filed on January 31, 2008 with respect to the previously rejected claims have been considered but are moot in view of the new grounds of rejection presented herein.

Election/Restrictions

4. Claims 13, 31, and 32 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 7, 2007 and on October 19, 2006.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there appears to be no proper antecedent basis in the specification for the term "clamp" as recited in claims 22 through 30.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

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subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1 through 6, 12, 14, 16, 17, and 22 through 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al.

Johnson et al. discloses a heat dissipating apparatus essentially as claimed, including, for example: two aluminum heat exchange members or thermally conductive substrates 6A and 6B configured to be placed on both sides of a semiconductor module 7, with portions 6A' and 6A'' of the heat exchange members configured to protrude above the semiconductor module 7; and, one of portions 6I and 6H being readable on the connection member or hinge as recited in the claims of the instant application and the other being readable on the C-shaped spring or biasing member or elastic member. Metal plate 6C may be a perforated or porous plate [see column 4, lines 52-65].

The reference thus reads on the claims.

8. Alternately, claims 22, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Beane et al.

Beane et al. discloses a heat dissipater essentially as claimed, including, for example: a flat, elongated thermally conductive substrate or heat sink backing plate 10; a clamp 50 structured to force a portion of the thermally conductive substrate or heat sink backing plate 10 against a top surface of one or

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more heat generating components that are attached to a circuit board (i.e., semiconductor package 60), the claim 50 further comprising a biasing member in the form of a C - shaped spring.

The reference thus reads on the claims.

9. Alternately for claims 22, 23, and 26, claims 22, 23, 26, 29, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Ross.

Ross discloses a heat dissipater apparatus essentially as claimed, including, for example: two heat exchange members or thermally conductive substrates or heat sinks or heat spreaders 115 and 120; a circuit board or semiconductor package 110; a clamp or spring clip 140; and, a non-conductive thermal interface material spacer 150 [see column 7, lines 1-12] disposed on the substrate or heat sink 120.

The reference thus reads on the claims.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 7 through 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al.

As noted in greater detail above, Johnson et al. discloses a heat dissipating apparatus essentially as claimed, but fails to specifically disclose a thermal interface material layer formed on at least one of the heat exchanger members 6A and 6B. Nevertheless, Official Notice is hereby taken by the examiner that providing a thermal interface material such as a thermal tape, thermal grease, thermal epoxy, or a phase change material between a heat sink type heat exchange member and a semiconductor module or package is notoriously well-known in the art. Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the heat dissipating apparatus of Johnson et al. by specifically

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providing a thermal interface material between at least one of the heat exchanger members 6A or 6B and the semiconductor module or package in order to improve the heat dissipation therefrom.

Allowable Subject Matter

12. The indicated allowability of claims 4, 5, 10, and 17 are hereby withdrawn in view of the newly discovered reference to Johnson et al. Rejections based on the newly cited reference appear above.

13. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 18 through 21 are allowed.

Conclusion

15. The additional prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner works a flexible schedule, but can normally be reached weekdays between 10:30 a.m. and 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer

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Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ljiljana (Lil) V. Ciric/

Primary Examiner, Art Unit 3744